Sasa kurilensis (syn Arundinaria kurilensis, bambusa kurilensus, Pseudosasa kurilensis) dwarf bamboo		Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range		
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture	n	0
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	2
4.01	Produces spines, thorns or burrs		
4.02	Allelopathic	unk	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	n	-1
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.		
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	y	1
5.01	Aquatic	n	0
5.02	Grass	y	1
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally	n	-1
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	>4	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)		

8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
	Total Score	**9**	
	Implemented Pacific Second Screening	**n/a**	
	Risk Assessment Results	**High**	

section	**# questions answered**	**satisfy minimum?**
A	10	yes
B	8	yes
C	14	yes
total	32	yes

	Reference	Source data
1.01		Cultivated, but no evidence of selection for reduced weediness.
1.02		skip to 2.01
1.03		skip to 2.01
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000). 3. Bamboo Garden nursury site (http://www.bamboogarden.com/Sasa%20kurilensis.htm [accessed 22 July 2014])	No computer analysis was performed. 1. Global hardiness zone: 3-10? ; equivalent to USDA Hardiness zones:7-10 . 2. Native to Asia temperate, Japan, Korea, Russian far east.
2.02		No computer analysis was performed. Native range is well known; refer to 2.01 source data.
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).	1. Distribution in the native/cultivated range occurs in Cfa, Dfa, Dfb. More than three climate types
2.04	1. World Climate (http://www.climate-charts.com [accessed 24 July 2014]) 2. Narukawa & Yamamoto (2002) Effects of dwarf bamboo (Sasa sp.) and forest floor microsites on conifer seedling recruitment in a subalpine forest, Japan. Forest Ecol Manag 163:61-70.	1. 38.5-97.4 inches in Japan. 2. At a subalpine site in Japan (in the northern Yatsugatake mountains), annual precipitation is 1500–2000 mm (59.1-78.75 inches).
2.05		Readily available from internet nurseries.
3.01		No Evidence Found
3.02	1. Randall (2012) A Global Compendium of Weeds 2nd Ed.Department of Agriculture and Food, Western Australia.	1. Listed as a weed in Japan, default to Garden/amenity/disturbance weed since type of weed not speciefied.
3.03		
3.04	1. Kudo et al. (2011) Invasion of dwarf bamboo into alpine snow-meadows in northern Japan: pattern of expansion and impact on species diversity. Ecology and Evolution 1: 85-96. 2. Nakashizuka (1988) Regeneration of beech (Fagus crenata) after the simultaneous death of undergrowing dwarf bamboo (Sasa kurilensis). Ecol Res 3:21-35.	1. Formation of dense evergreen culms and extensive rhizome system excludes other plants following invasion resulting in reduced species diversity. 2. Densely packed, long-lived, evergreen culms shade out other species preventing the regenreation of cool-temperate forests in Northern Japan.
3.05	1. Ryves, Clement, Foster (1996) Alien Grasses of the British Isles Botanical Society of the British Isles, London. 2. Royal Horticultural Society, UK (http://www.rhs.org.uk.[accessed 1 July 2014]) 3. Randall (2012) A Global Compendium of Weeds 2nd Ed Department of Agriculture and Food, Western Australia. 4. Li et al. (1992) Allelopathy of Sasa cernua J Chem Ecol 18:1785-1796.	1. Sasa palmata: England, environmental weed, Garden thug 2.Listed a garden thug. 2 & 3. Listed as weed with no further information in Europe and Japan. 4. Sasa (Sasa cernua Makino) is a very serious weed pest.
4.01		No Evidence Found
4.02	1. Li et al. (1992) Allelopathy of Sasa cernua J Chem Ecol 18:1785-1796.	No evidence found 1. Evidence that a congeneric species Sasa cernua has phytotoxic effects germination and seedling growth. "S. cernua produces typical allelopathy through its rhizosphere soil and air space."
4.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000).	1. Family: Poaceae (not a parasitic family).

4.04	1. Sika Deer: Biology and management of native and introduced populations. McCullough, Takatsuki, Kaji Eds. SpringerTokyo, Japan, pp. 1-665	1. Used as feed for sika deer in native range. Also used as winter forage for deer in native range. S. kurilensis considered a forage of "high palatibility."
4.05		No Evidence Found
4.06		No Evidence Found
4.07		No Evidence Found
4.08		No Evidence Found
4.09	1. Smith & Mack (2013) Shade tolerance of temperate Asian bamboos: a harbinger of their naturalization in Pacific Northwest coniferous forests? Biol Inv 15: 2081-2093 2. Tripathi et al. (2005) Growth and substrate quality of fine root and soil nitrogen availability in a young Betula ermanii forest of northern Japan: Effects of the removal of understory dwarf bamboo (Sasa kurilensis). Forest Ecol Manag 212: 278-290.	1.Among the temperate bamboo species we examined, only B. fargesii and S. kurilensis show lowered photosynthetic rates under progressively higher levelsof shade. Although they did not perform as wellas S palmata in 90% shade, this species did well in 70 and 30% treatments indicating tolerance to moderate shade. 2. persists in the understory in native range. 2.
4.10		No Evidence Found
4.11		No Evidence Found
4.12	1. Gansert (2004) Treelines of the Japanese Alps – altitudinal distribution and species composition under contrasting winter climates. Flora 199: 143–156. 2. Kudo et al. (2011) Invasion of dwarf bamboo into alpine snow-meadows in northern Japan: pattern of expansion and impact on species diversity. Ecology and Evolution 1: 85-96. 3. Nakashizuka (1988) Regeneration of beech (Fagus crenata) after the simultaneous death of undergrowing dwarf bamboo (Sasa kurilensis). Ecol Res 3:21-35.	1. The dominant dwarf bamboo species Sasa kurilensis covers vast areas by vegetative sprouting in the understorey of the subalpine forest and the treeline ecotone. 2. Formation of dense evergreen culms and extensive rhizome system excludes other plants following invasion resulting in reduced species diversity. 3. Densely packed, long-lived, evergreen culms shade out other species preventing the regenreation of cool-temperate forests in Northern Japan.
5.01	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000).	1. Family: Poaceae.
5.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000).	1. Family: Poaceae.
5.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896 (00 Month 0000).	1. Family: Poaceae.
5.04	1. Wang, K. et al. 2010. Identification of genes related to the development of bamboo rhizome bud. Journal of Experimental Botany, 61(2): 551–561.	1. According to the type of the rhizome, bamboos have been divided into three groups: scattered bamboos with a monopodial rhizome, caespitose bamboos with a sympodial rhizome, and pluricaespitose bamboos with a monopodial and sympodial rhizome. The rhizome bud can either develop into a bamboo shoot which will grow into a bamboo culm in a very short period, or develop into a new rhizome which will enable the sustainable production of the bamboo grove.
6.01	1. Makita (1992) Survivorship of a monocarpic bamboo grass, Sasa kurilensis, during the early regeneration process after mass flowering. Ecol Reasearch 7: 245-254.	1. Evidence of survivorship of seedlings after a mass flowering.

6.02	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824. 2. Makita (1992) Survivorship of a monocarpic bamboo grass, Sasa kurilensis, during the early regeneration process after mass flowering. Ecol Reasearch 7: 245-254.	1. The most easy method of bamboo propagation is by means of seeds. Propagation of economically important bamboo species by seeds is not possible annually because of their very long inter-mast periods. 2. Evidence of survivorship of seedlings after a mass flowering.
6.03	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	1. The peculiar flowering behaviour in bamboos make genetic improvement by hybridizations very difficult. The flowering and seeding at long intervals (7-120 years) render the overlapping of flowering in more than one species, in the same locality very difficult to obtain, making attempts at hybridizations impossible.
6.04	WHEN NO: 1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	No Evidence Found 1. Reproductive biology is not well understood in most of the species. Two categories are apparent so far: (i) species which exhibit dichogamy and protogyny and (ii) species in which the androecium and gynoecium mature at the same time. In species under the first category, only cross-pollination is possible. In the second category selfing is difficult because of the differential position of the anthers and the stigma, when they are mature.
6.05	1. Shor, B., Southern California Chapter. From Flowers to Seedlings. American Bamboo Society. Accessed: 18 March 2014. http://www.bamboo.org/GeneralInfoPages/FromFlowersToSeedlings.html	1. Most bamboos are wind-pollinated. Insects may be involved with some species.
6.06	1. Wang, K. et al. 2010. Identification of genes related to the development of bamboo rhizome bud. Journal of Experimental Botany, 61(2): 551–561. 2. Gansert (2004) Treelines of the Japanese Alps – altitudinal distribution and species composition under contrasting winter climates. Flora 199: 143–156	1. The rhizome bud can either develop into a bamboo shoot which will grow into a bamboo culm in a very short period, or develop into a new rhizome which will enable the sustainable production of the bamboo grove. 2. The dominant dwarf bamboo species Sasa kurilensis covers vast areas by vegetative sprouting in the understorey of the subalpine forest and the treeline ecotone.
6.07	1. Tanimoto & Kobayashi (1998) Monocarpic Mass Flowering of Sasa kurilensis var. jotanii (Bambusoideae) in Mikura-jima, Izu Islands, Japan. J Japanese Bot 73:42-47.	1. The period of flowering cycle was estimated as 60 years
7.01		No Evidence Found
7.02	1. Scurlock et al. 2000 Bamboo: an overlooked biomass resource? Biomass and Bioenergy, 19:229-244. 2. Liese and Hamburg. 1987. Research on bamboo. Wood Science and Technology, 21:189-209	1. Cultivated for erosion control, windbreaks, building material, food, bamboo fiber clothes, etc. 2. Also, has been proposed as a source for pulp for paper and possible biofuel source.
7.03	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	1. Very unlikely. The longevity of the seeds varies from species to species, but usually only last 2-3 months under natural conditions. Furthermore, seeds must be sowed immediately in optimal conditions to prevent damping off.
7.04		No morphological features (i.e., wings) that would suggest bamboo seeds are adapted for wind.
7.05		No Evidence Found
7.06		No Evidence Found
7.07		No morphological features that would suggest bamboo seeds are adapted for attachment.
7.08		No Evidence Found
8.01		No Evidence Found
8.02	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	1. The longevity of the seeds varies from species to species. Under natural conditions it is for 2-3 months.
8.03		No Evidence Found
8.04		No Evidence Found

8.05		No Evidence Found